AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listing of claims in the application. Deletions to the claims are indicated by strikethrough or double brackets. Additions to the claims are indicated by underline.

Listing of claims:

1. (Withdrawn) A method for screening compounds that modulate Fbp1-related disorders comprising:

    a. contacting a test compound with Fbp1 and Fbp5, and

    b. measuring the activity of Fbp1,

    such that if the activity measured in (b) is greater than or less than the activity measured in the absence of the test compound, then a compound that modulates Fbp1-related disorders is identified.

2. (Withdrawn) The method of Claim 1 wherein the activity of Fbp1 is measured by measuring the interaction of Fbp1 with Fbp5.

3. (Withdrawn) The method of Claim 1 wherein the activity of Fbp1 is measured by measuring the levels of protein of Fbp5.

4. (Withdrawn) A method for screening compounds that modulate Fbp1-related disorders, comprising:

    a. contacting a compound with a cell or a cell extract expressing Fbp1 and Fbp5, and detecting a change in the activity of Fbp1, and

    b. measuring the level of Fbp1 activity in a cell or cell extract in the absence of said compound,

    such that if the level of Fbp1 activity measured in (b) differs from the level of activity in (a), then a compound that modulates an Fbp1-related disorder is identified.

5. (Withdrawn) The method of Claim 4 wherein the activity of Fbp1 is measured by measuring the interaction of Fbp1 with Fbp5.

6. (Withdrawn) The method of Claim 4 wherein the activity of Fbp1 is measured by measuring the levels of protein of Fbp5.

7. (Currently Amended) A method for screening compounds useful for the treatment of proliferative and differentiative disorders comprising:

(a) contacting a compound with a cell or a cell extract ~~expressing~~ comprising βTrcp2, IκBα, and F-box Protein 1 ("FBP1"), wherein the FBP1 either:

(i) has the amino acid sequence of SEQ ID NO:2 or

(ii) is encoded by a nucleic acid molecule that hybridizes under moderately stringent conditions to the complement of a nucleic acid sequence of SEQ ID NO:1, ~~βTrcp2, and IκBα~~

wherein the βTrcp2, IκBα, or FBP1 is recombinantly expressed, and wherein the FBP1 and βTrcp2 comprise at least one biological activity of endogenous FBP1 and βTrcp2, respectively, and

(b) detecting a change in a FBP1 or βTrcp2 activity.

8-10. (Canceled)

11. (Withdrawn) The method of Claim 7 wherein the change in the activity of Fbp1 or βTrcp2 is detected by detecting a change in the interaction of Fbp1 or βTrcp2 with IκBα.

12. (Canceled)

13. (Previously Presented) The method of Claim 7 wherein the change in FBP1 or βTrcp2 activity is detected by detecting a change in IκBα protein levels.

14. (Currently Amended) A method for screening compounds useful for the treatment of proliferative and differentiative disorders comprising:

~~(1)~~ (a) contacting a compound with a cell or a cell extract ~~expressing FBP1~~ comprising βTrcp2, IκBα, and F-box protein 1 ("FBP1"), wherein the FBP1 either:

(i) has the amino acid sequence of SEQ ID NO:2 or

(ii) is encoded by a nucleic acid molecule that hybridizes under moderately stringent conditions to the complement of a nucleic acid sequence of SEQ ID NO:1, ~~βTrcp and IKBα~~

wherein the βTrcp2, IκBα or FBP1 is recombinantly expressed, and

wherein the FBP1 and βTrcp2 are capable of promoting the degradation of IκBα;

~~(2)~~ (b) determining the ability of the compound to modulate ~~FBP1 or βTrcp2 activity~~ the degradation of IκBα, wherein ~~modulation of FBP1 or βTrcp2 activity~~ a change in degradation of IκBα in the presence of the compound ~~and not in~~ relative to the absence of the compound identifies the compound as a compound useful for the treatment of proliferation and differentiative disorders~~;~~

~~wherein the FBP1 or βTrcp2 activity comprises degradation of IκBα~~.

15. (Canceled)

16. (Currently Amended) The method of Claim 14 wherein the change in degradation of IκBα ~~FBP1 or βTrcp2 activity~~ is detected by detecting a change in IκBα protein levels.

17. (Withdrawn) A method for diagnosing decreased fertility by examining Fbp1 in infertile individuals, comprising:

a. measuring the level of Fbp1 expression or activity in a tissue sample from an affected individual, and

b. comparing the level of Fbp1 expression or activity in the affected individual with the level of Fbp1 expression or activity in a clinically normal individual,

such that if decreased levels of Fbp1 expression or activity are detected in the affected individual relative to the clinically normal individual, an Fbp1-related infertility disorder is diagnosed.

18. (Withdrawn) The method of Claim 17, further comprising sequencing the Fbp1 gene in infertile individuals, to determine if a mutation in the Fbp1 gene is present.

19. (Withdrawn) The method of Claim 17, wherein measuring the level of Fbp1 expression comprises measuring Fbp1 RNA or protein levels in the sample.

20. (Withdrawn) A pharmaceutical composition for the treatment of Fbp1-related infertility, comprising (a) a compound that modulates Fbp1 activity and (b) a pharmaceutically acceptable carrier.

21. (Withdrawn) A method of treating Fbp1-related infertility, comprising administering to an individual in the need of such treatment a compound that modulates Fbp1 activity, in an amount effective for the treatment of the infertility.

22. (Withdrawn) A method for detecting an Fbp1-related infertility disorder in a mammal comprising measuring the level of Fbp1 activity or expression in said mammal, such that if the measured Fbp1 activity or expression differs from the level found in clinically normal individuals, then a Fbp1-related infertility disorder is detected.

23. (Withdrawn) The method of Claim 22, wherein the mammal is human.

24. (Withdrawn) The method of Claim 22, wherein the level of Fbp1 activity or expression is determined by detecting levels of Fbp1 RNA in said mamma*l*.

25. (Withdrawn) The method of Claim 22, wherein the level of Fbp1 activity or expression is determined by detecting levels of Fbp1 protein in said mamma*l*.

26. (Withdrawn) The method of Claim 22, wherein the Fbp1 RNA levels are measured by Northern Blot.

27. (Withdrawn) The method of Claim 22, wherein the Fbp1 protein levels are measured by Western Blot.

28. (Withdrawn) The method of Claim 22, wherein the Fbp1 protein levels are measured by immunoassay.

29. (Previously Presented) The method of claim 13 wherein the IκBα protein levels are increased in the presence of the compound.

30. (Previously Presented) The method of claim 16, wherein the IκBα protein levels are increased in the presence of the compound.

31. (Previously Presented) The method of claim 13, wherein the IκBα protein levels are decreased in the presence of the compound.

32. (Previously Presented) The method of claim 16, wherein the IκBα protein levels are decreased in the presence of the compound.

33. (Currently Amended) The method of claim 13, wherein the ~~IKBα~~ IκBα protein levels are measured by immunoassay.

34. (Previously Presented) The method of claim 16, wherein the IκBα protein levels are measured by immunoassay.

35. (Currently Amended) The method of claim 13, wherein the ~~IKBα~~ IκBα protein levels are measured by Western Blot.

36. (Previously Presented) The method of claim 16, wherein the IκBα protein levels are measured by Western Blot.

37. (New) A method for screening compounds useful for the treatment of proliferative and differentiative disorders comprising:

(a) contacting a compound with a cell or a cell extract comprising βTrcp2, IκBα, and F-box Protein 1 ("FBP1"), wherein the FBP1 either:

(i) has the amino acid sequence of SEQ ID NO:2 or

(ii) is encoded by a nucleic acid molecule that hybridizes under highly stringent conditions to the complement of a nucleic acid sequence of SEQ ID NO:1, wherein the βTrcp2, IκBα or FBP1 is recombinantly expressed, and wherein the FBP1 and βTrcp2 comprise at least one biological activity of endogenous FBP1 and βTrcp2, respectively; and

(b) detecting a change in a FBP1 or βTrcp2 activity.

38. (New) The method of Claim 37 wherein the change in FBP1 or βTrcp2 activity is detected by detecting a change in IκBα protein levels.

39. (New) The method of claim 38 wherein the IκBα protein levels are increased in the presence of the compound.

40. (New) The method of claim 38, wherein the IκBα protein levels are decreased in the presence of the compound.

41. (New) The method of claim 38, wherein the IκBα protein levels are measured by immunoassay.

42. (New) The method of claim 38, wherein the IκBα protein levels are measured by Western Blot.

43. (New) A method for screening compounds useful for the treatment of proliferative and differentiative disorders comprising:

(a) contacting a compound with a cell or a cell extract comprising ßTrcp2, IκBα, and F-box protein 1 ("FBP1"), wherein the FBP1 either:

(i) has the amino acid sequence of SEQ ID NO:2 or

(ii) is encoded by a nucleic acid molecule that hybridizes under highly stringent conditions to the complement of a nucleic acid sequence of SEQ ID NO:1,

wherein the βTrcp2, IκBα or FBP1 is recombinantly expressed, and wherein the FBP1 and βTrcp2 are capable of promoting the degradation of IκBα; and

(b) determining the ability of the compound to modulate the degradation of IκBα, wherein a change in degradation of IκBα in the presence of the compound relative to the absence of the compound identifies the compound as a compound useful for the treatment of proliferation and differentiative disorders.

44. (New) The method of Claim 43 wherein the change in degradation of IκBα is detected by detecting a change in IκBα protein levels.

45. (New) The method of claim 44, wherein the IκBα protein levels are increased in the presence of the compound.

46. (New) The method of claim 44, wherein the IκBα protein levels are decreased in the presence of the compound.

47. (New) The method of claim 44, wherein the IκBα protein levels are measured by immunoassay.

48. (New) The method of claim 44, wherein the IκBα protein levels are measured by Western Blot.